



SAVING Little Lives For BIG FUTURES

RECOMMENDED GUIDELINES FOR PHYSICIAN OFFICES, CLINICS, AND URGENT CARE CENTERS FOR PEDIATRIC EMERGENCY PREPAREDNESS

Wisconsin Department of Health and Family Services, Division of Public Health
Bureau of Emergency Medical Services and Injury Prevention, Emergency Medical Services for Children
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Recommended Guidelines for Physician Offices, Clinics, and Urgent Care Centers for Pediatric Emergency Preparedness

Children with life threatening emergencies are commonly brought to physician offices, clinics, and urgent care centers for treatment. One 1996 study identified that 82% of pediatric practices experience at least one such emergency monthly. Effectively initiating treatment for pediatric emergencies requires early recognition, management skills, equipment, medications and effective hospital transport. Several studies published in the last three years (1996-1999) have identified that major deficiencies in preparedness exist for a significant number of physician offices, clinics, and urgent cares.

The Wisconsin Emergency Medical Services for Children Advisory Committee identified emergency preparedness of physician offices and urgent care centers as an area having significant impact on the health and welfare of Wisconsin children. They recommended to the Bureau of Emergency Medical Services and Injury Prevention, Division of Public Health, Department of Health and Family Services (DHFS) the need to assist practitioners in maximizing office preparedness. An Emergency Medical Services For Children subcommittee developed recommendations for equipment, medications, and training. To facilitate rapid selection of equipment, the subcommittee also developed a reference for pediatric equipment based on weight and age. Likewise, to facilitate rapid access to consultant and transport services, a reference guide, "Essential Telephone Numbers for Pediatric Services" was also developed.

A list of the subcommittee members is on the following page for your reference.

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and Urgent Care Centers For Pediatric Emergency Preparedness**

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***Wisconsin Emergency Medical Services for Children
Recommended Guidelines for Physician Offices, Clinics,
and Urgent Care Centers for
for Pediatric Emergency Preparedness***

MINIMUM ESSENTIAL PREPAREDNESS GUIDELINES

Setting

Physician offices, clinics and urgent care facilities with paramedic response OR travel time to a hospital emergency department of less than 10 minutes.

Recommended Equipment

- ◆ Broselow Tape or similar age/weight chart
- ◆ Oxygen delivery devices
 - simple masks
 - non-rebreather masks
 - Sizes: infant, child, adolescent
- ◆ Oxygen source
- ◆ Suction apparatus and catheters
 - Sizes: 6F - 14F
- ◆ Oral airways
 - Sizes: 1, 2, 3, 4
- ◆ Nebulizer equipment
- ◆ Pocket mask
- ◆ Bag-valve mask
 - Sizes: infant, child, adolescent
- ◆ Ambu bag
 - Sizes: 500 cc, 1000 cc, 2000cc
- ◆ IV catheters
 - Sizes: 18, 20, 22, 24 gauge
- ◆ Intraosseous needles
 - Options
 - manufactured IO needle
 - pediatric bone marrow needle
- ◆ IV tubing
- ◆ IV fluid
 - Options
 - lactated ringers **or**
 - normal saline
- ◆ Syringes
 - Sizes: 1 cc, 3 cc, 10 cc, 50 cc

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Recommended Medications

- ◆ Albuterol for inhalation
 - Concentration: 5 mg/cc
 - Indications: status asthmaticus
 - Dose: 0.15mg/kg/dose
 - Maximum Dose: 5mg/inhalation

- ◆ Lorazepam (Ativan)
 - Concentration: 2mg/cc
4mg/cc
 - Indications: status epilepticus
 - Dose: 0.05-0.10 mg/kg
 - Maximum Dose: 5mg
 - Caution: administer over 2-3 minutes

- ◆ D₅₀W (50% dextrose)
 - Indications
 - hypoglycemia
 - unexplained altered mental status
 - Dose: 1cc/kg

- ◆ Epinephrine
 - Concentration: 1:10,000
 - Indications
 - asystole
 - anaphylaxis
 - Dose: 0.1 cc/kg
 - Maximum Dose: 5cc

Recommended Policies

Transport Policy

Recommended essential elements of the policy include:

- goals of transport - i.e. safest and most expeditious transport to an appropriate facility

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- level of transport service to be called based on the patient's requirements for care during transport and competencies of prehospital care providers: EMT-Basic, EMT-Intermediate, Paramedic, pediatric transport team
- medical control (responsible physician during transport) - who, what is their role
- treatment protocols, if any exist
- quality improvement activities - outcome, feedback, follow-up, etc.

Transfer Policy

Recommended essential elements of the policy include:

- potential receiving facilities for pediatric patients
- procedure for contacting the receiving facility and physician to provide essential information
- statement that copies of available records, including labs, radiographs, etc. should accompany the patient to the receiving institution
- documentation of receiving facility and physician, transport service, time of transfer

Recommended Training (minimum recommendation)

- ◆ Registered Nurse (RN), Licensed Practical Nurse (LPN), Medical Assistant (MA)-Basic Life Support (BLS) for the healthcare provider
- ◆ Medical Doctor (MD), Physician Assistant (PA), Pediatric Nurse Practitioner (PNP)-Basic Life Support (BLS) for the health care provider, and Pediatric Advanced Life Support (PALS)

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Recommended References

- ◆ Harriet Lane Handbook: Mosby 1993; 13th Edition
- ◆ Barkin: Mosby 1997; 2nd Edition
- ◆ The First Five Minutes; 9th Edition 1993, Produced By Maxishare, P. O. Box 2041, Milwaukee, WI (1-800-444-7747)

Articles:

- ◆ Flores, G. et al: The Preparedness Of Pediatricians For Emergencies In The Office. Archives of Pediatric Adolescent Medicine 1996; 150:249-256
- ◆ Martinot, A.: Family Practitioner Preparedness For Pediatric Emergencies. Archives Of Pediatric Adolescent Medicine 1997: 151;530-531
- ◆ Shetty, A.: Preparedness Of Practicing Pediatricians In Louisiana To Manage Emergencies. Southern Medical Journal; 1998:8:745-748

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MAXIMUM PREPAREDNESS GUIDELINES

Setting

Physician offices, clinics and urgent care centers with a travel time of 10 or more minutes to the hospital emergency department.

Recommended Equipment

- ◆ Broselow Tape or similar age/weight chart
- ◆ Oxygen delivery devices
 - simple masks
 - non-rebreather masks
 - Sizes: infant, child, adolescent
- ◆ Oxygen source
- ◆ Laryngoscope and blades
 - Sizes: 0 - 3
- ◆ Endotracheal tubes
 - Sizes: 2.5 – 7
- ◆ Stylettes (for Endotracheal tubes)
 - Sizes: 6F - 14F
- ◆ Oral airways
 - Sizes: 1 - 4F
- ◆ Needle Cricothyroidotomy Kit
- ◆ Pulse Oximeter
- ◆ Nasogastric Tubes
 - Sizes: 8F - 18F
- ◆ Suction apparatus and catheters
 - Sizes: 6F - 14F
- ◆ Nebulizer equipment
- ◆ Pocket mask
- ◆ Bag-valve mask
 - Sizes: infant, child, adolescent
- ◆ Ambu bag
 - Sizes: 500 cc, 1000 cc, 2000cc

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- ◆ IV catheters
 - Sizes: 18, 20, 22, 24 gauge
- ◆ Intraosseous needles
 - Options
 - manufactured IO needle
 - pediatric bone marrow needle
- ◆ IV tubing
- ◆ IV fluid
 - Options
 - lactated ringers **or**
 - normal saline
- ◆ Syringes
 - Sizes: 1 cc, 3 cc, 10 cc, 50 cc
- ◆ Cardiac Monitor
- ◆ Defibrillator
- ◆ Blood Glucose Strips
- ◆ T Connector
 - provides the port to administer medications

Recommended Medications

- ◆ Albuterol for inhalation
 - Concentration: 5 mg/cc
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 - Dose: 0.15mg/kg/dose
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- ◆ Lorazepam (Ativan)
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4mg/cc
 - Indications: status epilepticus
 - Dose: 0.05-0.10 mg/kg
 - Maximum Dose: 5mg
 - Caution: administer over 2-3 minutes

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- ◆ D₅₀W (50% dextrose)
 - Indications
 - hypoglycemia
 - unexplained altered mental status
 - Dose: 1cc/kg

- ◆ Epinephrine

<ul style="list-style-type: none"> – Concentration: 1:10,000 – Indications <ul style="list-style-type: none"> · asystole - first dose · anaphylaxis – Dose: 0.1 cc/kg – Maximum Dose: 5cc 	<ul style="list-style-type: none"> – Concentration: 1:1,000 – Indications <ul style="list-style-type: none"> · asystole - second and subsequent doses – Dose: 0.1cc/kg
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- ◆ Methylprednisolone (Solu-Medrol)
 - Indications
 - anaphylaxis
 - status asthmaticus
 - Dose: 1-2 mg/kg

- ◆ Dopamine
 - Concentration: 40 ug/cc
 - Indications: shock unresponsive to volume repletion
 - Dose: 2 - 20 ug/kg/min, titrated to desired cardiovascular effect

- ◆ Atropine
 - Concentrations: 0.4 mg/cc, 0.5 mg/cc, 1 mg/cc
 - Indications: bradycardia
 - reduction of secretions prior to intubation
 - Dose: 0.02 mg/kg
 - Minimum Dose: 0.1 mg
 - Maximum Dose: 1 - 2 mg

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- ◆ Sodium Bicarbonate
 - Concentrations: 0.5 mEq/ml, 1.0 mEq/ml
 - Indications: rare, for cardiac arrest
 - Dose: 1 mEq/kg
 - Caution: flush IV line well after use to avoid precipitation in line that may occur with administration of other drugs
- ◆ Insulin
 - Indications: DKA
- ◆ Naloxone (Narcan)
 - Concentrations: 0.4 mg/cc, 10 mg/cc
 - Indications:
 - ingestion
 - altered mental status
 - slow respirations
 - Dose: 0.1 mg/kg
 - Maximum Dose: 2 mg
 - Route: IV or IM
- ◆ Sterile Water to mix medications and flush IV lines
- ◆ Ceftriaxone
 - Dose: 50 mg/kg for sepsis
 - Maximum Single Dose: 2 G
 - Route: IV or IM

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Recommended Policies

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- documentation of receiving facility and physician, transport service, time of transfer

Recommended Training (minimum recommendation)

- ◆ Licensed Practical Nurse (LPN), Medical Assistant (MA)-Basic Life Support (BLS) for the healthcare provider
Medical Doctor (MD), Physician's Assistant (PA), Pediatric Nurse Practitioner (PNP), Registered Nurses (RN) – Basic Life Support (BLS) for the healthcare provider, and Pediatric Advanced Life Support (PALS)

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REFERENCE FOR STABILIZATION AND INITIAL MANAGEMENT OF PEDIATRIC EMERGENCIES¹		
Condition Requiring Emergency Care	Minimum Essential Equipment and Medications	Additional Equipment and Medication Needed for High-level Preparedness
Status asthmaticus	O ₂ , O ₂ delivery devices, nebulizer, syringes, inhaled B2-agonist or 1:1000 epinephrine	IV catheter or I0 needle, IV tubing, pulse oximeter, corticosteroid
Upper airway obstruction	O ₂ , O ₂ delivery devices, bag-valve-mask	Nebulizer, ETT, laryngoscope, oral and nasal airways, IV catheter or I0 needle, IV tubing, 1:1000 epinephrine, needle cricothyroidotomy kit, pulse oximeter
Shock	O ₂ , O ₂ delivery device, blood pressure cuff, stethoscope, IV catheter or I0 needle, IV tubing, volume expander ³	Antibiotic, vasoactive medication (dopamine hydrochloride, epinephrine, norepinephrine bitartrate)
Trauma	IV catheter or I0 needle, IV tubing 4 x 4 bandages	Syringes, sutures or clamp, tourniquet, mannitol, bag-valve Mask
Status epilepticus	O ₂ , O ₂ delivery device, bag-valve-mask, IV catheter or I0 needle, IV tubing syringes anticonvulsant medication, glucose	Oral and nasal airway, blood glucose test
Endocrine Emergency	IV catheter or I0 needle, IV tubing, parenteral cortico- steroid, glucose, volume expander	Blood glucose test, insulin, calcium chloride
Cardiac arrest ²	O ₂ , O ₂ delivery device, bag-valve-mask, stethoscope, IV catheter or I0 needle, IV tubing, syringes, 1:10000 epinephrine	ETT, laryngoscope, resuscitation board, ECG machine, defibrillator, atropine, lidocaine, bicarbonate

¹ O₂ indicates oxygen; IV-intravenous; PALS-pediatric advanced life support; I0-intraosseous; ETT-endotracheal tube; ATLS, advanced trauma life support.

² Includes asystole, ventricular fibrillation, and electromechanical dissociation.

³ Normal saline, Ringer's solution, or 5% albumin solution

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ESSENTIAL TELEPHONE NUMBERS FOR PEDIATRIC SERVICES

(Physician Office/Clinic/Urgent Care Center Name)

Service	Name	Telephone #
Ambulance – EMT		
Ambulance – EMT		

Ambulance-Paramedic		
Ambulance-Paramedic		
Transport Team		
Transport Team		
Local Hospital ED		
Local Hospital ED		
Referral Hospital		
Referral Hospital		
Poison Center		
Consultants:		
Specialty		
Specialty		
Specialty		
Specialty		
Specialty		
Child Protective Service		
Mental Health Service		
Mental Health Service		
Domestic Violence Line		
Alcohol/Drug Services		
Alcohol/Drug Services		
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Continued – Resource Telephone Numbers For Pediatric Services

Service	Name	Telephone #
Police		
Fire		

Immunizations:		
Health Department:		
Other		
Other		
Other		

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PEDIATRIC EQUIPMENT REFERENCE														
Age	Airway/Breathing							Circulation			Supplemental Equipment			
	O ₂ Mask	Oral Airway	Bag-Valve Mask (Bag)	Laryngoscope Blade	ET Tube	Stylet	Suction	BP Cuff	IV catheter	Single Lumen Central Catheter	NG Tube	Chest Tube	Foley Catheter	C-Collar
Premie 3 kg	Premie Newborn	Infant (1)	Infant (0.5L)	0 Straight	2.5 - 3.0 Uncuffed	6 Fr	6 - 8 Fr	Premie Newborn	22/24 Gauge	3 Fr, 5 cm	8 Fr Feeding tube	10 - 14 Fr	5 Fr Feeding	
Newborn 0-6 mos 3.5 kg	Newborn	Infant (1) Small (2)	Infant (0.5L)	1 Straight	3.0 - 3.5 Uncuffed	6 Fr	8 Fr	Newborn Infant	22 Gauge	3 Fr, 5 cm	8 - 10 Fr Anderson	12 - 18 Fr	5 - 8 Fr Feeding	
6-12 mos 7 kg	PED	Small (2)	PED (1.0L)	1 Straight	3.5 - 4.5 Uncuffed	6 Fr	8 - 10 Fr	Infant Child	22 Gauge	3 Fr, 5 cm	8 - 10 Fr Anderson	16 - 24 Fr	8 Fr	Baby no-neck
1 - 3 Yrs 10-12 kg	PED	Small (2)	PED (1.0L)	1 Straight	4.0 - 4.5 Uncuffed	6 Fr	10 Fr	Child	20-22 Gauge	4 Fr, 8 cm	12 Fr Anderson or Salem Sump	16 - 24 Fr	10 Fr	Baby no-neck
4 - 7 Yrs 16-18 kg	PED	Medium (3)	PED (1.0L)	2 Straight or Curved	5.0 - 6.0 Uncuffed	14 Fr	14 Fr	Child	20 Gauge	3 - 5 Fr, 8 cm	12 Fr Anderson or Salem Sump	20 - 32 Fr	10 - 12 Fr	PED
8-10 Yrs 24-30 kg	Adult	Medium (3) Large (4)	PED Adult (1.0, 2.0L)	2 - 3 Straight or Curved	6.0 - 7.0 Cuffed or Uncuffed	14 Fr	14 Fr	Child Adult	18 - 20 Gauge; 8.5 Fr EID; 7.0 and 8.5 Fr RIC	6 Fr, 15 cm	16 - 18 Fr Anderson, 12 or 18 Fr Salem Sump	28 - 38 Fr	12 - 16 Fr	Adult no-neck Adult regular
> 10 Yrs > 30 kg	Adult	Large (4)	Adult (2.0L)	2 - 3 Straight or Curved	6.0 - 8.5 Cuffed or Uncuffed	14 Fr	14 Fr	Adult	14 - 16 Gauge; 8.5 Fr EID; 7.0 and 8.5 Fr RIC	6 Fr, 15 cm	18 Fr Anderson or Salem Sump	28 - 38 Fr	12 - 16 Fr	Adult no-neck, Adult regular